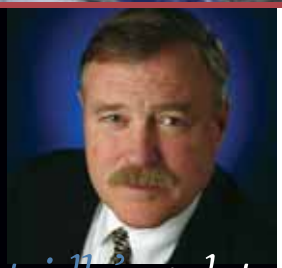
EXPLORATION SYSTEMS
express
October 2004



steidle's update

Welcome to the inaugural edition of the Exploration Express. As we continue our efforts toward implementing the Vision for Space Exploration, this publication will serve as a source of information and news regarding the Exploration Systems Mission Directorate's activities and accomplishments.

Following NASA Administrator Sean O'Keefe's June 22 announcement of the transformation of the agency, our newly formed Exploration Systems Mission Directorate welcomed the staff of the Biological and Physical Research Enterprise to the team. This addition serves to both enhance and enrich our mission, helping to directly satisfy our human need for exploration while advancing knowledge and research for earthbound issues such as cancer detection and treatment for cardiovascular problems.

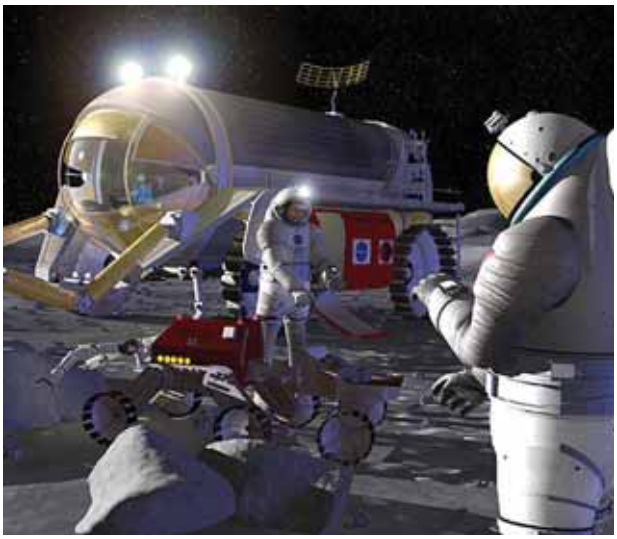
As you'll discover in this issue of the Express, the Exploration Systems Mission Directorate itself is in the midst of organizational activities that will fully leverage the strengths and talents of our diverse staff. In addition to our new colleagues from Biological and Physical Research, areas throughout the directorate are establishing their paths and contributions to the Vision for Space Exploration. I invite each of you to acquaint yourselves with the directorate's senior staff by reading their position briefs in the adjacent article. Afterward, take a moment to learn more about your directors and coworkers in person, as each shares my intense interest in creating a directoratewide dynamic of accessibility and team achievement based upon individual success.

Our exploration of the solar system holds both the intrigue of the unknown and the promise of the new innovations and technology that, inevitably, will result from our pursuit of new frontiers. I am excited to once again reach the moon, strive toward Mars, and look beyond to the goals and journeys of the future.

One Team: Exploration Systems Mission Directorate Mobilizing for Success

To support NASA Administrator Sean O'Keefe's recent announcement of the organizational structure's transformation and develop a team of the utmost quality, the Exploration Systems Enterprise underwent a fundamental restructuring to clarify organizational roles and responsibilities. The skills, talents and expertise of the former Biological and Physical Research and Exploration Systems Enterprises merged to form the new Exploration Systems Mission Directorate on August 1, 2004.

In order to streamline the organization and establish a foundation for a strong, dynamic team, key offices were formed to provide optimal support to Associate Administrator Craig E. Steidle and the infrastructure of the Vision for Space Exploration. Over time, a set of systems will be developed and integrated into a "system of systems" including a multitude of new concepts, vehicles and technologies anchored by the new Crew Exploration Vehicle (CEV). When coupled with transfer stages, landing vehicles and surface exploration systems, the CEV is a vital aspect of an architecture that supports human voyages to the moon and beyond.



As the exploration objective will be based on clear, firm requirements, development will be filtered into "spirals" to facilitate efficient progress and aid the teams in supporting the objectives throughout their evolution. Each spiral begins with requirements establishment and clarification; moves through definition, development and demonstration phases; and subsequently transfers to operations and support.

To achieve development results of the highest caliber, the efforts involved in the Vision for Space Exploration will span NASA and extend into industry and academia. The following key personnel and their dedicated teams will assist in driving new ventures and objectives within the agency to ensure continued and consistent progress toward the new goals.

As chief of staff and assistant to Steidle, **Bobby Watkins** will assist the directorate in implementing information management, operations and outreach activities per the Administrative Activities Organization. Mr. Watkins' team is dedicated to communicating the Mission Directorate messages to both public and legislative audiences as well as providing the information technology support for the directorate's future ventures. As part of their mission, they will build on the successes of the past to transform, establish and streamline processes to create efficient support for both our objective as a directorate and the vision of the agency as a whole.

Dr. Howard Ross, deputy associate administrator for research and technology, will maintain a team dedicated to research and technological development of applications that advance the Vision for Space Exploration. The team's programs will aim for efficiency and timeliness to support the development and implementation of exploration sys-

(continued on next page)

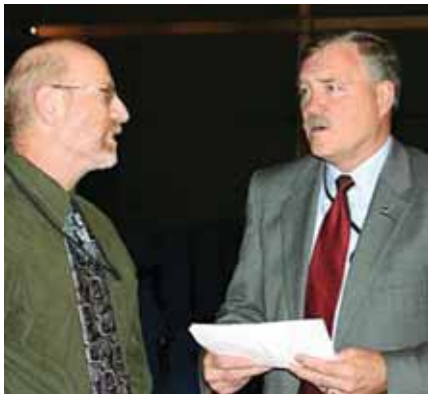
One Team

(continued from previous page)

tems "development spirals" as well as utilize a system-of-systems, goal-oriented approach to research and development. This will help the team create and lead subprograms ranging from the broad, generalized Exploration Systems Research and Technology program to more specific objectives such as nuclear technology development.

Deputy Associate Administrator for Development Programs and Program Executive Officer **Jim Nehman** will lead a team and direct the design and development of the constellation of new capabilities necessary to achieve the Vision, each of which will require revolutionary technologies and innovations. These resources will leverage the spiral development concept to allow flexibility in the response to new scientific discoveries while minimizing risk and the expense of redesign.

Dr. Michael Lembeck leads the Requirements Division. While every explorer is initially romanced by the idea of a quest, the journey itself requires an actual vessel. Within Exploration Systems, the responsibility to establish a set of requirements for the next generation of space-bound vessels falls to the Requirements Division. With a team of engineers, scientists, operators and logisticians from across the agency, the division aims to develop a new fleet of vehicles and systems that will transport humans and supplies to destinations new and old.



Top: Howard Ross talks with Steidle following his kick-off speech at the Exploration Systems Mission Directorate all-hands meeting. Above: Jim Nehman, Dan Mabey, Howard Ross and Brad Carpenter (from left) listen to Steidle's transformation address at the inaugural Exploration Systems Mission Directorate all-hands meeting.

Deputy Associate Administrator for Systems Integration **Doug Cooke** will provide guidance and management for external interfaces and coordinating activities between the Exploration Systems Mission Directorate, other NASA directorates, field centers, senior agency leadership and potential international partners. Systems Integration will also lead key areas such as requirements approval, potential contract support and coordination between divisions. Mr. Cooke's staff will be led by **Lisa Guerra**, formerly of the Biological and Physical Research Enterprise.

Procurement Director **Dan Mabey** and his team will lead the Exploration Systems team in acquisitions strategy and will work to assess and continually improve the programs and use of resources within the directorate. In addition, the team will assist in information management and the dissemination of relevant information to directorate personnel.

Exploration Systems Budget Director **Craig Tupper** and his team will establish business and resource management guidelines while providing and reviewing cost analyses for the directorate's various projects. Through effective financial management, the team will advance and enhance NASA's objectives and serve as careful custodians of taxpayer investments by achieving major milestones with less than one percent of the federal budget.

Exploration Systems Mission Directorate Launches New Web Site

In support of the transformation and to allow industry and academia a more closeup view of the directorate's new goals and principles, the Exploration Systems Mission Directorate recently launched its newly designed Web site at **www.exploration.nasa.gov**. In addition to general information and links to the latest NASA news and educational tools, the portal includes indepth information about the organization, its development cycles and its strategies. Visitors also will find announcements; important dates; and an archive of articles, images and documents about the acquisition and transformation, as well as the ways in which NASA technology improves everyday life. In the coming weeks and months, the site will undergo a transformation mirroring that of Exploration Systems itself. Stay tuned and experience the transformation with us!

Event Success: Monthly Highlights

Centennial Challenges, NASA's new program of prize contests, hosted its first workshop on June 15–16 in Washington, D.C. This inaugural workshop was created in order to solicit ideas and concepts for future challenges as well as refine the best candidates for contests to be held during the 2004 and 2005 fiscal years. Among the 250 potential Centennial Challenge competitors and workshop attendees were members of industry, academia, students and the general public, while keynote speakers included Senator Sam Brownback, chairman of the Commerce Subcommittee on Science, Technology, and Space; John H. Marburger, director of the White House Office of Science and Technology Policy; and Elon Musk, chief executive officer and chief technology officer for Space Exploration Technologies Corporation. According to Brant Sponberg, Centennial Challenges program manager and event organizer, "The workshop provides us with our first important external inputs, which we will use in the months ahead to build prize competitions that attract strong fields of competing teams." www.centennialchallenges.nasa.gov

NASA also hosted its **Office of Exploration Systems Industry Day** on June 18 at the Department of Commerce in Washington, D.C. Over 450 participants from eight countries represented 135 different companies and academic institutions who received an overview of recent and upcoming activities related to the implementation of the Vision for Space Exploration. The forum provided specifics about the Request for Information for Exploration Systems as well as the pre-proposal for the Concept Exploration and Refinement Broad Agency Announcement. Participants also were given the opportunity to speak with members of a NASA panel specializing in the program. https://naccsli1.msfc.nasa.gov/ExplorationPortal

The 300-plus audience members at the Human and Robotic Technology Broad Agency Announcement spanned industry, academia and NASA itself, while 600 hits were logged on the webcast site.

In a followup to the Exploration Systems Industry Day, NASA hosted the **Pre-Proposal Conference for Human and Robotic Technology Broad Agency Announcement** on July 29 in the auditorium at NASA Headquarters. Over 300 participants from 125 different industries and educational institutions were in attendance, while numerous Internet viewers tuned in to participate. The Exploration Systems Web site (www.exploration.nasa.gov) logged over 600 hits during the conference.

The United Kingdom's recent **Farnborough Air Show** afforded Steidle the opportunity to meet with many of our international counterparts. Held July 19–23, the air show provided a forum for Steidle to speak with the following individuals:

(continued on next page)

Jean-Jacques Dordain, Lord David Sainsbury and Craig Steidle (from left) participate in the activities during July's Farnborough Air Show, held in the United Kingdom.

Event Success

(continued from previous page)

Mr. Kaoru Mamiya
Vice President, Japan Aerospace Exploration Association (JAXA)

Mr. Alexander Ivanovich Medvedchikov
Deputy Head for International Policy and Cooperation
Russian Federal Space Agency

Mr. Jean-Jacques Dordain
Director General
European Space Agency (ESA)

Mr. Daniel Sacotte
Special Director for Exploration
European Space Agency (ESA)

Dr. Colin Hicks
Director General
British National Space Center

Lord David Sainsbury
Under Secretary of State for Science and Technology for the U.K. Department of Trade and Industry

This incredible opportunity for discussion with our international partners helped to strengthen the long history and close ties NASA has built with the space and research agencies of other nations. By introducing our international partners to our Vision for Space Exploration, we encourage the continued approach to the implementation of uniform goals for space exploration.

Visitors to the U.K.'s Farnborough Air Show explore NASA's exhibit and learn about the new Vision for Space Exploration.

events

October 4–8
International Astronautical Conference
Vancouver, Canada

October 14–17
American Association of Retired Persons National Convention
Las Vegas, Nev.

November 16–18
International Space Exploration Workshop
Washington, D.C./Virginia area

January 10–13
Aerospace Sciences Meeting and Exhibit
Reno, Nev.

January 30–February 1
1st Space Exploration Conference: Continuing the Voyage of Discovery
Orlando, Fla.

tid bits

With summer wrapping up and camping season in full swing, cold drinks and crisp picnic food are the perfect refreshments after a hot day on the beach or the hiking trail, while escaping north for those summer nights and fall evenings can send you scrambling for the hot chocolate.

Did you know…

NASA technology behind space cooling systems and thermoelectricity inspired the creation of a portable cooler/warmer that can be plugged into the cigarette lighter in your car, RV, boat or a motel outlet. It uses miniature modules to deliver the cooling power of a 10-pound block of ice and can heat up to 125° Fahrenheit. Think about that the next time you're craving some icy cold refreshment after a long hike!

Exploration Express is a regular publication of NASA's Exploration Systems Mission Directorate.

Editor: Kai Miller

explorationexpress@nasa.gov